

Response to 05/13/2008 Office Action
Serial No.: 10/762,664
Filed: January 22, 2004
Inventors: David J. Beebe et al.
Group Art Unit: 3767
Confirmation No.: 5152

IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-8 (Cancelled).

9. (Withdrawn) The microfluidic device of claim 1 further comprising:
a second reservoir for receiving a bolus of the drug therein; and
an actuation device movable between a non-actuated position and an actuated position
wherein the bolus of the drug is urged through the outlet needle and into the individual.

Claims 10-16 (Cancelled).

17. (Withdrawn) The microfluidic device of claim 10 wherein the body defines a
second reservoir for receiving a bolus of the drug therein; and wherein the microfluidic device
further comprises an actuation device movable between a non-actuated position and an
actuated position wherein the bolus of the drug is urged through the outlet needle and into the
individual.

19. (Cancelled)

20. (Withdrawn) The microfluidic device of claim 18 further comprising a docking
station for supporting the output needle, the docking station being removably connected to the
body.

21. (Currently Amended) A microfluidic device for delivering a drug to an individual, comprising:

a body defining ~~a reservoir for receiving the drug and~~ a chamber for receiving an aqueous solution therein and including a membrane for defining a reservoir, the membrane isolating the reservoir from the chamber;

an output needle having an input in communication with the reservoir and an output receivable within the individual;

a conduit having an input communicating with the aqueous solution and an output, the conduit having a first configuration wherein the aqueous solution is isolated from the chamber and a second configuration wherein the chamber communicates with the aqueous solution through the conduit;

an adhesive for affixing the body to the individual;

a pressure source including an hydrogel member received within the chamber and being expandable in response to exposure to the aqueous solution, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and

a valve ~~defining a chamber and~~ interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle.

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) The microfluidic device of claim 26 ~~23~~ wherein the trigger includes a hydrogel post, the hydrogel post changing configuration in response to exposure to a ~~predetermine~~ predetermined condition in the physiological fluids.

25. (Withdrawn) The microfluidic device of claim 10 wherein the body defines a second reservoir for receiving a bolus of the drug therein; and wherein the microfluidic device further comprises an actuation device movable between a non-actuated position and an actuated position wherein the bolus of the drug is urged through the output needle and into the individual.

26. (Currently Amended) A microfluidic device for delivering a drug to an individual, comprising:

a body defining a reservoir for receiving the drug;

an output needle having an input in communication with the reservoir and an output receivable within the individual;

an adhesive for affixing the body to the individual;

a pressure source including an hydrogel member expandable in response to exposure to a predetermined physical property, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and

a valve defining a chamber and interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle, the valve including:

a flexible membrane for dividing the valve chamber into a drug flow portion and a trigger receiving portion; and

a trigger positioned within the trigger receiving portion of the valve chamber and having a first configuration with the valve in the non-actuated position and a second configuration with the valve in the actuated position; and

a first sensing needle having an input receivable in the individual and an output within the trigger receiving portion of the valve chamber, the first sensing needle allowing physiological fluids to pass from the individual to the trigger receiving portion of the valve

chamber.

27. (Currently Amended) A microfluidic device for delivering a drug to an individual, comprising:

a body defining chamber and including a membrane defining a reservoir for receiving the drug, the membrane isolating the reservoir from the chamber;

an output needle having an input in communication with the reservoir and an output receivable within the individual;

a conduit having an input communicating with the predetermined physical property and an output, the conduit having a first configuration wherein the predetermined physical property is isolated from the chamber and a second configuration wherein the chamber communicates with the predetermined physical property through the conduit;

an adhesive for affixing the body to the individual;

a pressure source including an hydrogel member expandable in response to exposure to a the predetermined physical property originating within the body, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and

a valve ~~defining a chamber and~~ interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle.

28. (Previously Presented) The microfluidic device of claim 27 wherein the predetermined physical property is defined by an aqueous solution.